

# AARYAN PRAVEEN

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## EXPERIENCE

### HumanitariansAI

Aug 2025 - Feb 2026

#### Software Engineer

- Built a traffic simulation in TypeScript using Canvas API and React that renders 200+ concurrent vehicles with real-time physics calculations, multi-lane navigation, and configurable traffic rules for analyzing freeway dynamics.
- Implemented complex vehicle behavior algorithms with randomized driver personalities, lane-changing logic, and adaptive speed control to simulate realistic traffic patterns across multi-lane freeways.
- Built serverless backend with Vercel Functions and MongoDB Atlas to save simulation runs, allowing users to persist traffic scenarios and resume analysis across browser sessions.

### Flair Labs

Oct 2021 - Apr 2023

#### Associate Software Engineer

- Built a reusable Lit Elements component library with 20+ modular components deployed across 3 production SaaS applications, standardizing UI/UX patterns and enabling rapid feature development through pre-built, tested components.
- Worked closely with UI/UX designers to define component specifications and API contracts, then authored integration documentation to accelerate developer onboarding and adoption.
- Maintained and enhanced Java Spring Boot backend and Angular frontend deployed on AWS Elastic Beanstalk, implementing new features, debugging production issues, and optimizing database queries.
- Identified and fixed 10+ security vulnerabilities (XSS, CSRF, SQL injection, file traversal) in 6 Java applications by reviewing Rapid7 and Bsecure reports and testing with Burp Suite, implementing input validation, parameterized queries, and NGINX security policies (HSTS, CSP).

## PROJECTS

### PoliSightsAI - AI-Powered Policy Intelligence Platform

Feb 2025 - Apr 2025

- Built an automated ETL pipeline using Apache Airflow and Selenium to scrape 100+ daily federal policies, process them with OpenAI for summarization and embeddings, then load structured data into Snowflake for analytics.
- Implemented semantic search using OpenAI embeddings and Pinecone vector database to match policies to business profiles through retrieval-augmented generation (RAG), enabling personalized recommendations based on industry and compliance requirements.
- Created a conversational interface using FastAPI and OpenAI with MongoDB backed session memory, enabling contextual follow-up querying across indexed policy datasets.
- Containerized the full application stack (React frontend, FastAPI backend, Airflow workers) using Docker Compose, enabling one-command deployment for a 5-person cross-functional team during the hackathon.

### NimbleDev - Cloud-Native Browser IDE

Jan 2025 - Feb 2025

- Built a WebSocket-powered browser IDE using Node.js and node-pty for real-time terminal emulation, enabling users to execute shell commands with full I/O streaming.
- Developed React frontend integrating xterm.js and Monaco editor in a split-pane interface with multi-file tabs, collapsible file tree, and Hot Module Replacement for instant HTML/CSS/JS preview updates.
- Containerized the application with Docker for isolated user sessions and explored Kubernetes orchestration locally using kind to test multi-instance deployment patterns and session management strategies.

## EDUCATION

### Northeastern University

Boston, MA

Master of Science in Computer Software Engineering, GPA: 3.7/4.0

May 2025

## TECHNICAL SKILLS

**Languages:** Java, JavaScript, TypeScript, Python

**Frameworks & Libraries:** React, Angular, NextJS, Redux, NodeJS, ExpressJS, Spring Boot, GraphQL, REST APIs, Vite, Webpack, HTML, CSS, Flask, Django, Streamlit

**Databases & Cloud:** MySQL, PostgreSQL, MongoDB, Pinecone, ChromaDB, Azure, AWS (EC2, S3, Lambda, Auto Scaling Groups), GCP

**DevOps & Tools:** Docker, Kubernetes, CI/CD (Jenkins, GitHub Actions), Git, Apache Tomcat, NGINX, Figma

**AI/ML:** OpenAI API, RAG, Vector Embeddings, Semantic Search, NLP, LangChain